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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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08/17/2001

Hongjie Cao

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11/02/2005

NATIONAL STARCH AND CHEMICAL COMPANY

P.O. BOX 6500

BRIDGEWATER, NJ 08807-3300

EXAMINER

GOLLAMUDI, SHARMILA S

ART UNIT

PAPER NUMBER

1616

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/932,435

Applicant(s)

CAO ET AL.

Examiner

Sharmila S. Gollamudi

Art Unit

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 October 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4-14,16-18 and 20-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-14,16-18 and 20-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/5/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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### **DETAILED ACTION**

Receipt of Amendments/Response and the Terminal Disclaimer filed 8/23/05 and the IDS of 10/5/05 is acknowledged. Claims **1, 4, 6-14,16-18 and 20-28** are pending in this application. Claims 2-3, 5, 15, and 19 stand cancelled.

#### ***Double Patenting***

The rejection of claims 1, 4, 6-12, and 24-27 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-11 co-pending application 10/371459 is withdrawn in view of Terminal Disclaimer filed 8/23/05.

The rejection of claims 1, 4-14,16-18 and 20-28 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims co-pending application 10/198469 is withdrawn in view of Terminal Disclaimer filed 8/23/05.

#### ***Specification***

The amendment filed 8/23/05 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: Applicant has amended the specification to recite: Heat-treated Ketrol T (fluid bed reactor at 113 C (235F) for 60 minutes). Applicant states that the amendment is consistent with the other examples; however this is not adequate support for showing that formula 12-15 in particular utilized the amended temperature and time. For instance, applicant states the amendment has support since it is consistent with the other examples that utilize the amended time and temperature; however the examiner points out that formula 26-30 utilize

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various temperature and time frames. Thus, the amendment does not have support for the amendment.

Applicant is required to cancel the new matter in the reply to this Office Action.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1, 4, 6-11, 18, and 24-26 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 11-236310.**

JP discloses a composition containing heat-treated xanthan gum. See example 5. The reference discloses the method of making xanthan gum used in the composition. (Note pg. 5, 6, and example 1). JP 11-236310 teaches a composition containing xanthan gum in the amount of 0.01-2%, in the form of a cream or gel. JP discloses applying the compositions to the skin. See page 11. The reference teaches the method of making xanthan gum prior to mixing it into a cosmetic composition. The reference discloses that xanthan gum provides stability to the composition but has low viscosity and a greasy feel if too much is added. The reference discloses heating the gum 100 degrees and above increases viscosity, and the gum should not be heated above 140 degrees to avoid discoloration of the gum. Thus, the temperature should be with the range of 100-140 degrees Celsius. The reference teaches the preferable viscosity range of the gum to be 5000-22000 cPs, which allows it to be used in small quantities. (Note 4-6 and example

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1). JP discloses heating xanthan gum under vacuum at a temperature of 115 degrees Celsius for 3 hours.

Reference example 2 discloses an aqueous solution of the high molecular weight xanthan gum (heat treated at 115 degrees Celsius for 3 hours under a vacuum) in a weight percent of 0.5, 1, 1.5, and 2 respectively. The viscosity of 0.5% xanthan gum in an aqueous solution is 5000 mPas, 1% xanthan gum in an aqueous solution is 10,000 mPas, 1.5% xanthan gum in an aqueous solution 22,000 mPas, and 2% xanthan gum in an aqueous solution is 33,000 mPas.

Note that although JP does not explicitly specify the moisture content of less than 8% and less than 1%, it is the examiner's position that JP's xanthan gum disclosed especially the xanthan gum disclosed in reference example 2 inherently has the instant moisture content. The examiner bases this position on that fact that JP's xanthan gum is heated treated at 115 degrees Celsius for 3 hours and applicant claims a heat treatment of 105 degrees Celsius for at least 2.5 hours has a moisture content of less than 1% (see the dependent limitation in claim 9). Therefore, it is the examiner's position that the xanthan gum has the instant moisture content and since the examiner has made a rationale for inherency, the burden has shifted to the applicant to prove that the prior art does not have the instant property.

With regard to the limitation of "a fixative effective amount", the instant specification defines on page 7 wherein applicant states that the xanthan gum is utilized in the amount of 0.01-20% and preferably 0.01- less than 2% and JP teaches a range of 0.01-2%.

With regard to the preamble, the examiner's points out that "hair composition" does not hold patentable eight unless it denotes a structural limitation and instant case it does not.

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Note that it is the examiner's position that reference example 2 must inherently meet the recitation "wherein the composition has a high humidity curl retention of at least about 80% for two hours at 90% relative humidity" since the prior art utilizes the same xanthan gum as instant invention and in the same amount. Therefore, since the prior art composition and the instantly claimed composition are not structurally distinguishable, both must have the same properties.

***Response to Arguments***

Applicant argues that JP does not teach heat-treating the gum to the instant moisture content since JP's discloses that the drying decrease should be 50%. Applicant argues that JP teaches heating the xanthan gum in water and water vapor. Further, applicant argues that using water or water vapor will add moisture to the xanthan gum and thus JP's xanthan gum will not have the instant moisture content. Applicant argues that JP broadly discloses the instant heat-treated xanthan gum in cosmetics and not specifically in a hair composition. Applicant argues that JP does not teach a composition that would exhibit 80% curl retention and does not mention the hair fixative ability of the gum.

Applicant's arguments filed 8/23/05 have been fully considered but they are not persuasive.

It is noted that applicant has quoted isolated portions of JP's teaching to fit applicant's arguments. Objectively looking at JP's teachings, JP teaches that the "raw material" should have a 50% or less drying decrease with the drying decrease of 15% or less being preferred. This means that the starting xanthan gum material must be capable of drying to at least to 50% of its quantity and preferably it should be able to be dried to less than 15%. Thus, JP's disclosure is not equivalent to "the gum should be only dried to 50%" as argued by applicant.

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With regard to applicant's argument that JP heats the gum using water vapor, the examiner points out that JP teaches various methods in which the gum is heated. Firstly, it is pointed out that water is not taught as one of the liquids used in heating the gum. Applicant has made a misleading statement. The liquids taught include alcohols, alkanes, diols, and ethers. Secondly, the examiner points although water vapor as one of the gases utilized to dry the gum, JP notes that the **gas used does not react with the gum**. See page 5, paragraph 3. Therefore, moisture is not added as argued by applicant. Moreover, the examiner points to the working example wherein the gum is heated treated under vacuum at a temperature of 115 degrees C for 3 hours. It is further pointed out that once the examiner has made a reasonable rationale for inherency, it is the applicant's burden of providing otherwise. Applicant has not submitted any evidence except unpersuasive arguments as the why the moisture content is not inherent. See MPEP 2112.

With regard to the intended use argument, the examiner points out that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In the instant case, the examiner points out that reference example 2 discloses an aqueous solution of the high molecular weight xanthan gum (heat treated at 115 degrees Celsius for 3 hours under a vacuum) at a weight percent of 0.5, 1, 1.5, and 2. The viscosity of 0.5% is 5000 mPas, 1% is 10,000 mPas, 1.5% 22,000 mPas, and 2%

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is 33,000 mPas. The instant composition is directed to a fixative effective amount of xanthan gum. The fixative amount is defined on page 7 of the instant specification in an amount of 0.01-20% and JP teaches 0.01-2%. Thus, “products of identical chemical composition can not have mutually exclusive properties”. See *In re Spada*, 911 F. 2d. 705, 709, 15 USPQ 2d 1655, 1658 (Fed. Cir. 1990). The examiner again points out that the instant claimed invention and the prior art are not structurally distinguishable.

In response to applicant's arguments, the recitation hair composition has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

### ***Response to Amendment***

Applicant argues that the instant declaration in Figure 1 demonstrates that the prior art is not capable of performing the intended use.

The Declaration under 37 CFR 1.132 filed 5/12/04 is insufficient to overcome the rejection of claims based upon JP 11-236310 because:

The examiner notes that Formula 13 of the instant invention contains 1% of the heat-treated xanthan gum and water. However, applicant is comparing inventive formula 13 to JP's formula containing 0.3% heat-treated xanthan gum. This is not a proper comparison since it is unclear if the fixative effect increases with the weight percent of the xanthan gum. The applicant



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cannot compare and conclude unexpectedness of a composition when the composition contain different amount of xanthan gum. Applicant should either compare the inventive composition also containing 0.3% xanthan gum or compare the instant invention that contains 1% heat treated xanthan gum with JP's reference example 2. Reference example 1 and 2 disclose an aqueous solution of the high molecular weight xanthan gum (heat treated at 115 degrees Celsius for 3 hours under a vacuum) at a weight percent of 0.5, 1, 1.5, and 2.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claim 12, 21-22, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-236310.**

As set forth above, JP 11-236310 discloses a composition containing heat treated xanthan gum in the amount of 0.01-2%, that can be used in hair cosmetics and in the form of a cream or gel and method of preparing compositions containing the heat treated xanthan gum. The

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reference discloses that xanthan gum provides stability to the composition but has low viscosity and a greasy feel if too much is added. JP discloses heating the xanthan gum to provide for a high molecular weight xanthan gum. The gum is heated at 100-140 degrees Celsius, preferably 100-130 degrees Celsius, and most preferably 105-125 degrees Celsius for 30 minutes to 10 hours and more preferably 30 minutes to 7 hours. The reference discloses to avoid discoloration of the gum the xanthan gum should not be heated above 140 degrees. The xanthan has a moisture content of less than 50%, preferably less than 20%, and most preferably less than 15%. See page 5. Reference example 2 discloses an aqueous solution of the high molecular weight xanthan gum (heat treated at 115 degrees Celsius for 3 hours) at a weight percent of 0.5, 1, 1.5, and 2. The viscosity of 0.5% is 5000 mPas, 1% is 10,000 mPas, 1.5% 22,000 mPas, and 2% is 33,000 mPas. JP teaches heating of the polymer is done in a liquid to avoid discoloration.

JP does not specify the turbidity of the composition. Further, JP does not specify the method of claim 21 and 22.

It is deemed obvious to a skilled artisan in the art at the time the invention was made to manipulate the prior art's turbidity parameters to provide for a desired result thorough routine experimentation. It is known to skilled artisan that a turbid solution has a value about 100 NTU or higher whereas a slight hazy solution has a value 20 to 50 NTU. See art of interest US 6,147,038. Therefore, a skilled practitioner would have been motivated to decrease turbidity of the hair composition to manipulate the clarity of the composition to provide for an aesthetically pleasing product, i.e. translucent product.

It is further obvious to a skilled artisan in the art at the time the invention was made to apply JP's xanthan gum composition to the hair. One would have been motivated to do so since

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JP teaches the use of JP's heat treated xanthan gum in hair compositions (page 11); thus the methodology of a hair composition is implicit in that it is applied to the hair.

***Response to Arguments***

Applicant argues that JP does not teach a xanthan gum heat-treated to a moisture content of 8% or less. Applicant argues that JP briefly mentions that the xanthan gum can be used in hair cosmetic composition however all the examples are directed to skin compositions. Applicant argues that JP does not teach every element of the claim and thus cannot be rendered obvious.

Applicant's arguments filed 8/23/05 have been fully considered but they are not persuasive. The examiner has discussed the merits of JP above and it is the examiner's position that the moisture content is inherent. As acknowledged by the applicant, JP does suggest the use of the heat-treated xanthan gum in hair cosmetics. Although the examples are directed to skin care compositions, the examiner points out that disclosed examples and preferred embodiments do not constitute a teaching away from the broader disclosure or nonpreferred embodiment". See *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). Lastly, the examiner points out that the claims are rejected under obviousness; thus JP does not need to exemplify the instant methodology of applying the composition to the hair.

**Claims 13-14, 16-17, 20-23, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-236310 in view of Bhatt et al (6,113,881).**

JP 11-236310 discloses a composition containing heat treated xanthan gum in the amount of 0.01-2%, that can be used in hair cosmetics and in the form of a cream or gel and method of preparing compositions containing the heat treated xanthan gum. The reference discloses that xanthan gum provides stability to the composition but has low viscosity and a greasy feel if too

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much is added. JP discloses heating the xanthan gum to provide for a high molecular weight xanthan gum. The gum is heated at 100-140 degrees Celsius, preferably 100-130 degrees Celsius, and most preferably 105-125 degrees Celsius for 30 minutes to 10 hours and more preferably 30 minutes to 7 hours. The reference discloses to avoid discoloration of the gum the xanthan gum should not be heated above 140 degrees. The xanthan has a moisture content of less than 50%, preferably less than 20%, and most preferably less than 15%. See page 5. Reference example 2 discloses an aqueous solution of the high molecular weight xanthan gum (heat treated at 115 degrees Celsius for 3 hours) at a weight percent of 0.5, 1, 1.5, and 2. The viscosity of 0.5% is 5000 mPas, 1% is 10,000 mPas, 1.5% 22,000 mPas, and 2% is 33,000 mPas. JP teaches the xanthan gum may be used in hair cosmetics and may include other additives such as film-forming agents, resins, film-forming agents, etc. See page 7, first paragraph.

Although, JP 11-236310 suggests the use of other film-forming polymers, JP does specify the instant polymers. Also, JP does not specify the use of a surfactant-free mousse formulation.

Bhatt et al teach a hair styling surfactant free mousse containing a polyurethane hair resin. See abstract. Bhatt teaches polyurethane resins have good tear strength, excellent washability, good adhesion, and are soluble in water. Further, Bhatt teaches the use of polyurethane resins allow styling of the hair with curling irons and has foaming properties that allow omission of surfactants from the mousse composition. Bhatt et al disclose that the mousse has better hair retention because it is free of surfactants, which can plasticize dry resinous films left on hair, which adversely affect the hair retention properties. See column 3, lines 1-15 and column 7, lines 5-15. Additionally, the reference teaches the use of instant hair fixative resins to provide a degree of stiffness for a certain configuration. See column 13, lines 1-66. Lastly, Bhatt

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teaches the polyurethane resins and the second fixative resins provide for a clear solution. See column 5, lines 15-20.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of JP 11-236310 and Bhatt et al and include a secondary polymer. One would have been motivated to do so since Bhatt teaches the instant polymers are water-soluble polymers that provide styling/holding capacity and stiffness. Further, Bhatt teaches the use of instant polyurethane resins allow the omission of surfactants to provide for better hair hold retention of the resin utilized. Therefore, it would have been prima facie obvious to utilize a secondary fixative polymer in JP's composition for its additive effect and to provide a composition with increased holding capacity. One would have expected success by the combination since JP not only suggests the use of heat-treated xanthan gum in hair cosmetics but also teaches combination of the heat-treated xanthan gum with other conventional water-soluble polymers and Bhatt teaches the instant polyurethane polymer is a water-soluble polymer.

#### ***Response to Arguments***

Applicant argues that JP does not teach the instant xanthan gum. Applicant argues that JP teaches the use of water-soluble polymers and film forming polymers but does not teach the instant polymers. Applicant argues Bhatt does not teach the use of natural polymers such as xanthan gum.

Applicant's arguments filed 8/23/05 have been fully considered but they are not persuasive. The merits of JP have been discussed above. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642

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F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The examiner points out that JP suggests the use of other water soluble polymers in the composition and Bhatt teaches the use of instant water-soluble polyurethane polymer to increase the fixative property of the composition. A skilled artisan would have expected similar results since JP not only teaches the inclusion of other water-soluble polymers in the composition but also suggests hair compositions.

#### *Art of Interest*

The prior art US 6,147,038 is cited as art of interest for its general teaching at the time the invention was made of turbidity as measured in NTU.

#### *Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharmila S. Gollamudi whose telephone number is 571-272-0614. The examiner can normally be reached on M-F (8:00-5:30), alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Kunz can be reached on 571-272-0887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sharmila S. Gollamudi  
Examiner  
Art Unit 1616

SSG

  
SREENI PADMANABHAN  
SUPERVISORY PATENT EXAMINER